

Excel Intermediate



Microsoft Training Series



Proven Learning and
Development Solutions

Countif, Sumif, Averageif

These 3 functions can calculate specific things in your data, allowing you to do useful analysis.

Countif counts how many times a specific thing appears in your data.

It has 2 elements.

Range: The range of cells you want evaluated. You can either use a cell range like \$D\$2:\$D\$30, or a column range like D:D.

Criteria: The specific thing you are counting in the range. It can be either text or a cell reference.

| Function Arguments | |
|--------------------|-----|
| COUNTIF | |
| Range | D:D |
| Criteria | H2 |

Sumif adds together all the numbers that match a specific thing.

It contains a Countif within it, so the range and criteria are identical.

Sum Range: What numbers are being counted from the same row after it finds the criteria.

| Function Arguments | |
|--------------------|-----|
| SUMIF | |
| Range | D:D |
| Criteria | H2 |
| Sum_range | E:E |

Averageif creates an average of all the numbers that match a specific thing.

It contains a Countif within it, so the range and criteria are identical.

Average Range: What numbers are being counted from the same row after it finds the criteria.

| Function Arguments | |
|----------------------|-----|
| AVERAGEIF | |
| Range | D:D |
| Criteria | H2 |
| Average_range | E:E |

IF

If is one of the most versatile functions in Excel. It has 3 Elements:

Logical Test: A calculation using a comparison operator. This will always resolve as either true or false.

Value if True: What is displayed in the cell if the test is true. This can be a calculation or text.

Value if False: What is displayed in the cell if the test is False. This can be a calculation or text.

=IF(Test, TRUE, FALSE)




IF always only looks for 1 variable for its true value.
Any other value is deemed false.

Use Cell References to create Variable boxes. You can edit these instead of amending your functions.

Ensure you are creating Absolute References where needed.

Comparison operators:

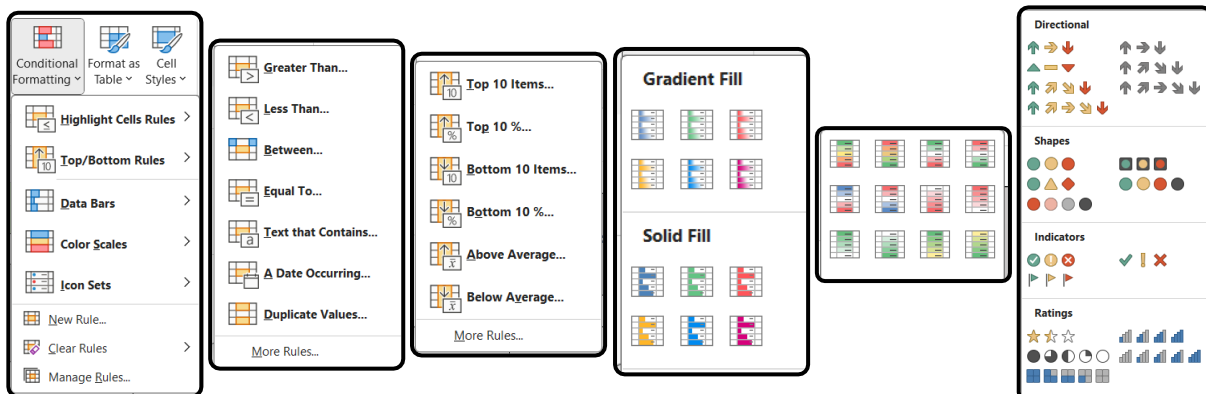
| | |
|----|--------------------------|
| > | Greater Than |
| >= | Greater than or equal to |
| < | Less than |
| <= | Less than or equal to |
| = | Equals |
| <> | Not equal to |

| Function Arguments | | | |
|--------------------|-------------------|---|---------------------|
| IF | | | |
| Logical_test | B5>=5000 |  | = TRUE |
| Value_if_true | B5*10% |  | = 500 |
| Value_if_false | "Under Performed" |  | = "Under Performed" |

Conditional Formatting

| ID no. | Branch | Buy Price | Sale Date | Selling Price | Revenue | Cost |
|--------|----------------|-----------|------------|---------------|---------|-----------|
| 13 | Emersons Green | £176,075 | 20/01/2024 | £189,000 | £1,255 | £609.00 |
| 364 | Kingswood | £171,183 | 21/01/2024 | £229,917 | £1,340 | £629.00 |
| 31 | Kingswood | £136,263 | 19/08/2024 | £222,644 | £1,580 | £806.00 |
| 148 | Emersons Green | £110,882 | 21/01/2024 | £213,900 | £1,898 | £855.00 |
| 364 | Kingswood | £133,090 | 11/12/2023 | £196,582 | £1,100 | £606.00 |
| 107 | St George | £157,171 | 24/07/2024 | £226,265 | £1,934 | £816.00 |
| 78 | Hanham | £146,636 | 17/08/2024 | £183,332 | £882 | £576.00 |
| 109 | St George | £164,801 | 12/08/2024 | £232,348 | £1,531 | £773.00 |
| 113 | Brislington | £113,836 | 18/06/2024 | £213,900 | £1,480 | £9,540.00 |
| 16 | Fishponds | £136,926 | 01/08/2024 | £183,401 | £950 | £705.00 |
| 140 | Kingswood | £162,035 | 20/01/2024 | £209,690 | £1,921 | £877.00 |
| 364 | Hanham | £149,284 | 21/01/2024 | £169,045 | £1,592 | £666.00 |
| 96 | Kingswood | £132,401 | 20/01/2024 | £222,176 | £1,867 | £845.00 |
| 174 | Brislington | £172,149 | 07/08/2024 | £197,800 | £1,166 | £595.00 |
| 91 | St George | £154,259 | 28/07/2024 | £214,168 | £1,111 | £594.00 |
| 71 | Hanham | £178,489 | 08/08/2024 | £166,658 | £1,615 | £788.00 |
| 88 | Kingswood | £148,629 | 20/01/2024 | £224,647 | £1,143 | £552.00 |
| 117 | St George | £134,763 | 30/07/2024 | £206,156 | £1,643 | £786.00 |
| 85 | St George | £118,473 | 20/01/2024 | £224,072 | £2,034 | £896.00 |
| 26 | Hanham | £141,726 | 07/08/2024 | £218,983 | £1,699 | £894.00 |
| 146 | Hanham | £155,584 | 28/07/2024 | £161,644 | £1,732 | £845.00 |
| 135 | St George | £164,136 | 21/01/2024 | £204,875 | £1,541 | £710.00 |

Conditional formatting allows you to change the colour of a cell based on the data that is in the cell.



You can use the presets to create several different formatting rules.

You can highlight specific values, see dates or duplications, find the top or bottom values, create data bars in each cell or display a RAG status.

Don't forget that you can click on 'Clear Rules' and 'Manage Rules' to edit your conditional formatting if you need to.

Dates

You can enter a date as 1/1/24
or 1-1-24.

You can also use Keyboard
Shortcuts.

Current Date: Ctrl + ;

Current Time: Ctrl + Shift + ;

30/04/2024

12:33

=TODAY()

=NOW()

You can use the Today and
Now functions to give dynamic
date and time references.
You can use these in any date
calculation to get rolling totals.

Excel stores dates as numbers. Each day is the next number upwards. You can use
the number formatting dropdown to change them between numbers and dates.

This means basic maths with dates are very simple.

Find the number of days between 2 dates:

= 'Future Date' – 'Past Date'

Find a date in the future:

= 'Date' + 'Number of Days'

Find a date in the past:

= 'Date' – 'Number of Days'.

30/04/2024

45412

16/08/2024

45520

Multiple Worksheets

You can add a cell reference from another sheet by simply clicking on the sheet and then the cell when writing your calculations.


= 'Invoice 1'!M2

=COUNT('Invoice 1'!B:B,'Invoice 2'!A:A)

| | |
|---------|-----------------|
| AVERAGE | |
| Number1 | 'Invoice 1'!G:G |
| Number2 | 'Invoice 2'!C:C |

This works in any calculation, and can be done whether you are writing in the cell itself or using the FX button.

You can always follow along with your calculation as you write it by looking at the formula bar.

 = 'Invoice 1'!N2+'Invoice 2'!K2



If you hold shift as you select sheets, you can group them together. This allows you to replicate anything you do in one sheet identically in the others you have grouped.

You can also use sheet grouping to easily create summaries.

=SUM(North:West!B3)

Flash Fill

| Last Name | First Name | Full Name |
|-----------|------------|---------------|
| Burgess | Ellie | Ellie Burgess |
| Smith | Barbara | barbara Smith |
| Zhang | Dae | Dae Zhang |
| Kim | Kazumi | Kazumi Kim |
| Patel | Yuki | Yuki Patel |
| Wang | Mei | Mei Wang |
| Nguyen | Akira | Akira Nguyen |
| Lee | Takumi | Takumi Lee |

Flash fill allows you to take data from one list, change it, and then populate it into a different column.

You must fill out the first entry, then either type the first letter of the second entry or press Ctrl + E

You can do things like:

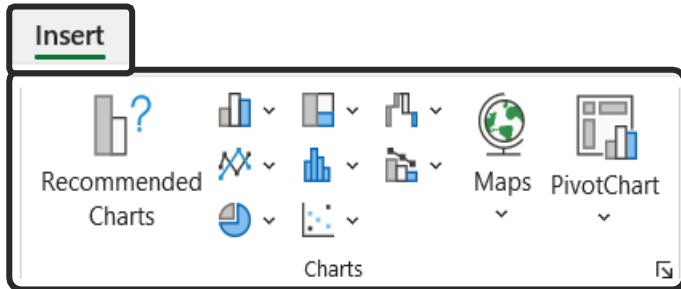
- Combine names from different columns into one
- Split names from one column to multiple
- Add punctuation into number strings
- Remove email addresses from names

| ID Number | ID Number (nnn-nnn-nnn) |
|-----------|----------------------------|
| 123456789 | 123-456-789 |
| 849315495 | 849-315-495 |
| 807497512 | 807-497-512 |
| 458235485 | 458-235-485 |
| 315164582 | 315-164-582 |
| 387474195 | 387-474-195 |
| 273635648 | 273-635-648 |
| 726454842 | 726-454-842 |

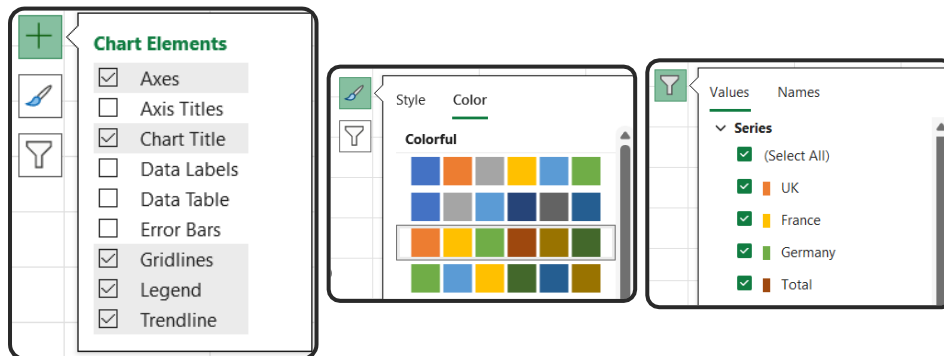
| Email Address With Names | Names Extracted from Email |
|-------------------------------|-------------------------------|
| Lottie.Dodwell@example.com | Lottie Dodwell |
| Felix.Henderson@example.com | felix Henderson |
| Bex.Hodgekiss@example.com | Bex Hodgekiss |
| Millie.Callaghan@email.com | Millie Callaghan |
| Eleanor.Morrissey@senario.com | Eleanor Morrissey |
| Chansey.White@instance.com | Chansey White |
| Belvides.Sumbo@example.com | Belvides Sumbo |
| Becca.Russell@example.com | Becca Russell |
| Katie.Pality@example.com | Katie Pality |

You must ensure that you spell the first entry correctly, and that the entries are in the same format.

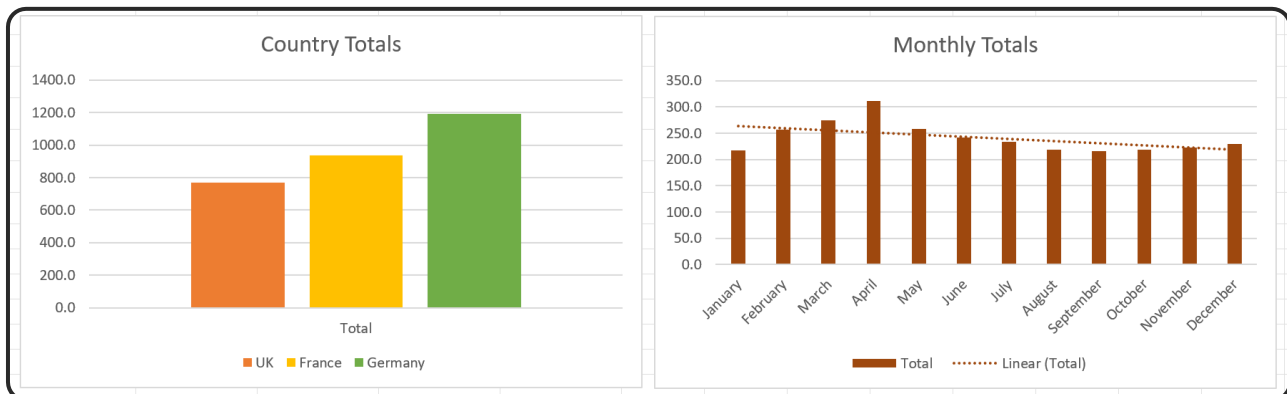
Charts



Click on Insert on your ribbon, and you can choose from a vast selection of charts to visualise your data.



To the right of your chart, you can click on the Elements, Styles and Filters buttons to edit and amend your chart.



You can create multiple charts from the same data, and change the filters to show completely different analysis.

Auditing Sheets

There are a lot of errors you may encounter in Excel.
They are often easy to diagnose and fix.

#REF!

A Reference Error is when a cell reference in the calculation has been deleted. You must redo the calculation.

#NAME?

A Name Error is when the function name has been spelt incorrectly. Double check you have the correct function.

#VALUE!

A Value Error means that one of the cell references in the calculation is text. Make sure all cells are referring to a number.

#DIV/0!

A Div/0 error means that your calculation is trying to divide by 0. Ensure that you are dividing by a positive number.

Auditing Sheets

```
=SUM(C6:F6)  
=SUM(C7:F7)  
27646
```

0

£0

Press Ctrl + ` or 'Formulas – Show Formulas' to see the formulas in the cell instead of the calculations.

Excel may calculate 0 if it doesn't understand the logic of your calculation.

| | |
|----|-----------|
| | C |
| 29 | =SUM(C18: |
| 30 | C29) |

A circular reference in where you are using the cell in its own calculation. This resolves as a 0. Make sure all calculations are in their own cell.

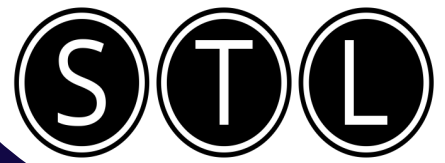
| |
|----------------------------------|
| Mediterranean Coast 7 days |
| New Zealand Natural tour 14 days |
| =COUNT(A30:A37) |

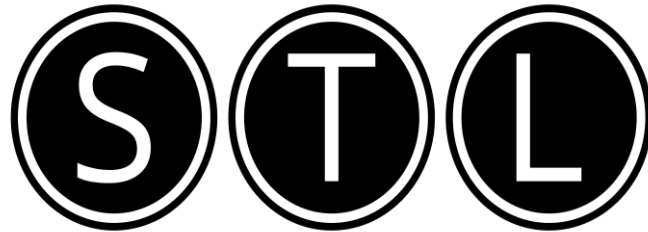
The Count function only counts numbers. If you try to count text it will display 0. Use CountA to count text as well.

```
=COUNTA(A39:A47)
```

All calculations start with an = sign. A space beforehand will turn your calculation into a text reference. Ensure your calculations are displayed properly.

Notes

A large, empty rounded rectangle with a dark blue border, intended for taking notes.



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